A rare case of extramedullary hematopoiesis in the mediastinum diagnosed by endoscopic ultrasound

A 48-year-old woman with chest pain for the preceding 2 months and a previous history of hereditary spherocytosis was referred for endoscopic ultrasound (EUS) to evaluate mediastinal lymphadenopathy and a heterogeneous mediastinal mass diagnosed by computed tomography (CT). EUS (Fujinon, Saitama City, Japan) showed a hyperechogenic and heterogeneous peri-esophageal, supra-diaphragmatic lesion (Fig. 1) and a peri-aortic/vertebral lesion (Fig. 2). EUS also demonstrated multiple lymph nodes in the para-esophageal, subcarinal, and right high paratracheal regions, suggesting a reactive process. The patient underwent EUS-guided fine-needle aspiration (EUS-FNA) of the right supra-diaphragmatic lesion, performed with a 19-gauge needle (Cook Medical, Limerick, Ireland) (Fig. 3). Analysis of the histologic sections confirmed the diagnosis of extramedullary hematopoiesis in the mediastinum (Fig. 4).

Extramedullary hematopoiesis, the formation of apparently normal blood cells outside the confines of the bone marrow, is a rare condition that is usually associated with a hematologic disorder. It generally occurs in the postero-inferior mediastinum [1, 2], frequently involving the liver, spleen, and lymph nodes. However, the condition may also develop in other sites, such as the thymus, kidneys, retroperitoneum, intrathoracic cavity, pleurae, pericardium, and intracranial cavity. Most cases are associated with a hemoglobinopathy that produces severe, chronic anemia, such as thalassemia, hereditary spherocytosis, or hemolytic anemia, or with leukemia, lymphoma, or a myeloproliferative disorder. The differential diagnosis includes neoplastic, infectious, and hereditary or acquired conditions. Magnetic resonance imaging and CT cannot differentiate benign from malignant disease, so invasive procedures are undertaken (trans-thoracic needle biopsy, mediastinoscopy, and thoracoscopy) to establish the diagnosis [3, 4]. Recently, EUS has been used in the staging of lung cancer because material can be obtained from mediastinal lymph nodes with a minimally invasive technique (EUS-FNA) [5–8].

In this article, we report a rare case of extramedullary hematopoiesis in the mediastinum diagnosed by EUS-FNA. The procedure is a highly accurate and useful tool for the assessment of mediastinal pathology and should be used to sample tissue from mediastinal lymph nodes or masses adjacent to the esophagus.
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References


Bibliography

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Corresponding author
Augusto Carbonari
Santa Casa de São Paulo Hospital
Department of Endoscopy
French-Brazilian Centre of Endoscopic Ultrasound (CFBEUS)
Rua Cesário Mota junior, 112 São Paulo 01221-020 Brazil
Fax: +55-11-21767000
augustocarbonari@gmail.com

Marco Camunha1, Augusto Carbonari1, Julia Araujo1, Ivan Rondelli2, Mauro Ajaj Saieg1, Lucio Rossini1

1 Santa Casa de São Paulo Hospital, Department of Endoscopy, and French-Brazilian Centre of Endoscopic Ultrasound (CFBEUS), São Paulo, Brazil
2 Santa Casa de São Paulo Hospital, Department of Cytopathology, São Paulo, Brazil

Fig. 4  a, b  Histologic sections of the cell block show a proliferation of lymphoid and myeloid cell precursors in blood and adipose tissue, compatible with bone marrow tissue, leading to the diagnosis of extramedullary hematopoiesis.